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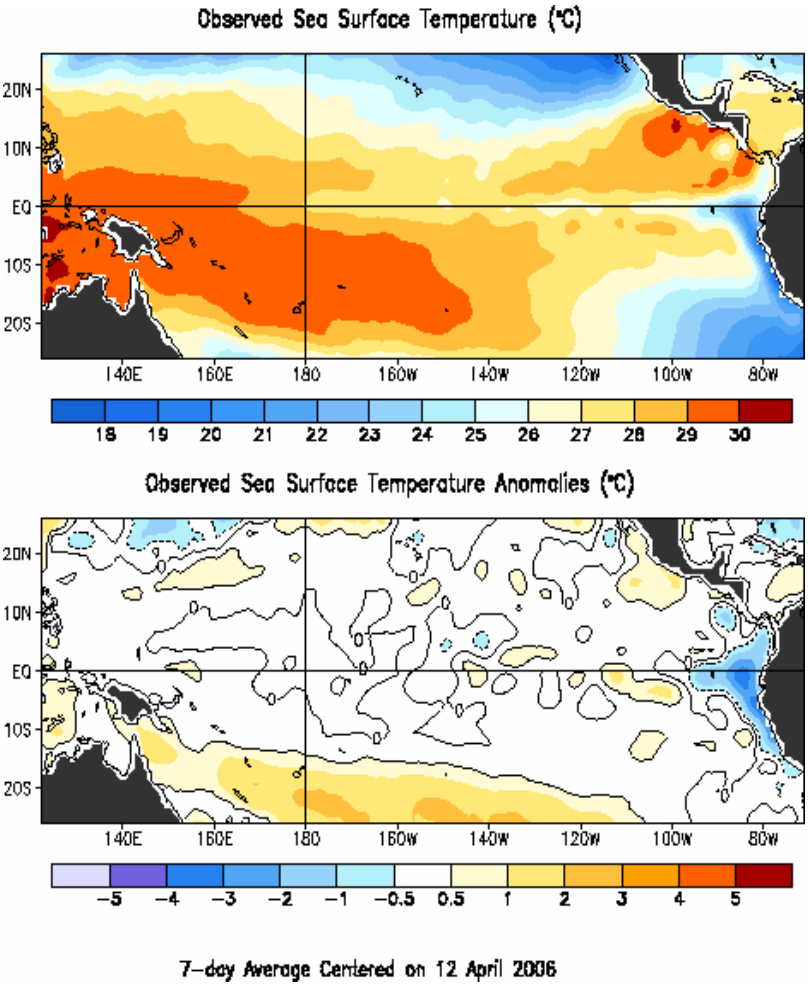
Coast to Cactus Weather Examiner

National Weather Service - San Diego

The National Weather Service Spotter Newsletter for Extreme Southwestern California

A Dry Winter, A Wet Spring and La Niña

Just as the Climate Prediction Center declared a return of La Niña, the storms came rolling in. Normally, a La Niña pattern means drier than normal conditions for Southern California, but spring so far has been slightly wetter than normal (late March through mid April). The longwave pattern of late (the general circulation in the eastern Pacific Ocean) has been an open-door policy to late season storms.



In This Issue

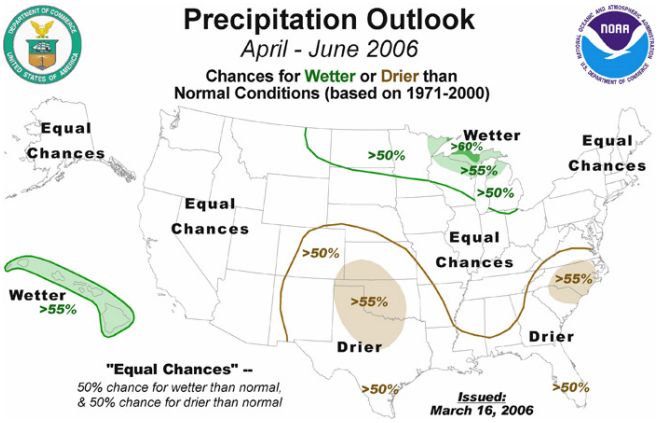
The climatology of our region dictates a dramatic downturn in chances of precipitation during the spring. So the effects of La Niña may be a tiny contribution, but largely undetectable.

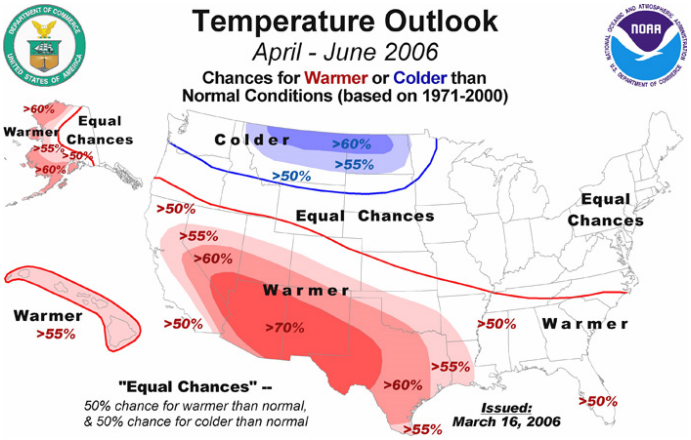
Most of the statistical and coupled model forecasts indicate ENSO-neutral conditions in the tropical Pacific through the end of 2006. The spread of the most recent statistical and coupled model forecasts (weak La Niña to weak El Niño) indicates uncertainty in the outlooks for the last half of the year. However, current conditions (stronger-than-average easterly winds over the central equatorial Pacific and below-average upper-ocean heat content) support those forecasts indicating that La Niña conditions will continue for the next 1-3 months.

Late Spring – Early Summer Outlook

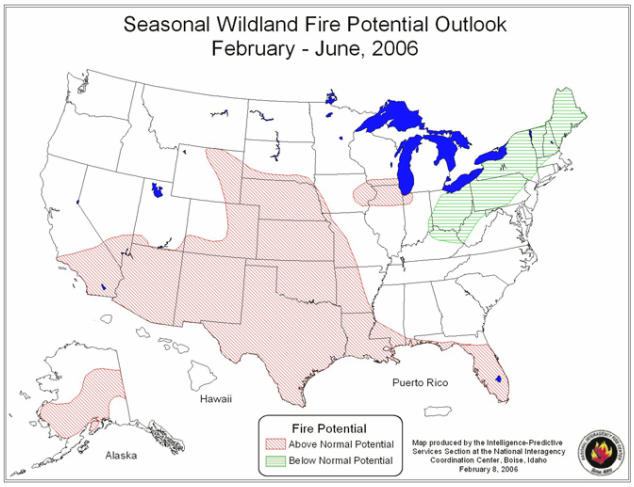
The official NOAA Spring outlook calls for wetter than normal conditions during the early spring in the southwest, and drier than normal conditions through June. La Niña conditions will help to reduce the rainfall as Southern California heads into its normally dry season. A heightened fire danger exists because fuels have been dry much of the winter.

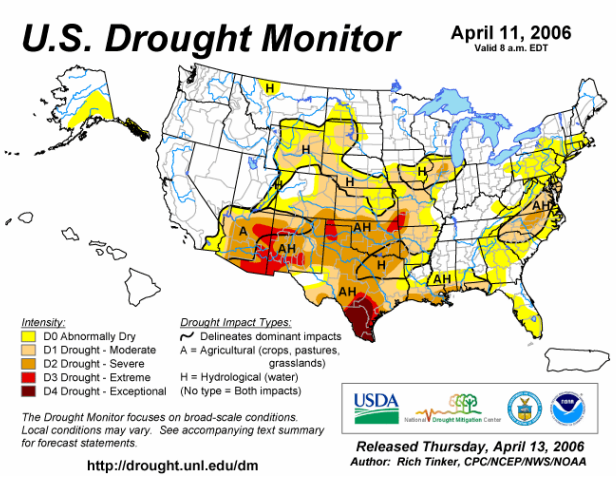
"Recent storms have eased the drought situation in many areas of the country, but the rain and snow arrived too late to offset the impacts from months of record dry weather across the Southwest, resulting in the continuing potential for a dangerous fire season," said David L. Johnson, director of the NWS. Weak La Niña conditions, which developed this winter, contributed to significant drought concerns in the Southwest, central and southern Plains. "April through June is typically dry in the Southwest, so drought will very likely persist or even worsen until the thunderstorm season arrives this summer," said Ed O'Lenic of the Climate Prediction Center.





"The National Interagency Fire Center's Seasonal Wildland Fire Potential Outlook for February through June 2006 calls for an above normal fire potential for Southern California, the Southwest, Southern Plains to Florida; and a below normal potential in the Northeast," said Rick Ochoa, National Interagency Fire Center fire weather program manager.





The U.S. Seasonal Drought Outlook calls for dry conditions persisting through June in the Southwest and the southern and central Plains, despite temporary improvement in some areas.

For more information:

www.noaanews.noaa.gov/stories2006/s2595.htm

We Still Want You for the Mesonet

The NWS in San Diego continues working on a new way of obtaining vital weather information that will increase the accuracy of our forecasts and warnings. There is a growing network of weather stations across our region that report hourly weather information directly to our office and augments the cooperative (coop) weather network already established.

How will it help us? Our mission is to protect lives and property from the adverse affects of weather. Our region is replete with unique climates and countless microclimates. Many weather phenomena are very small in scale, things like thunderstorms or strong winds, which can miss our equipment and our detection. Our dense population increases the impact whenever threatening weather occurs. With the new network, we will know better exactly what is going on, where, and when. With this added information, and with the continued use of helpful spotter reports, more accurate forecasts and warnings are on the way.

Some of you have posted the weather data online. We hope to gain quick access to the data by typing a few keystrokes to find out weather conditions at a location and to have some measure of quality control over these sites. Of course if more information is needed, a personal contact would be necessary.

Look for the web link headlined on our home page **weather.gov/sandiego** as "You Can Help - San Diego Mesonet - Join Us" for further information and to apply. The site will explain the vision of the project, the kind of commitment required, and it shows you how to be considered. Thanks!

Quarterly Summary

January

The month and year got off to a wet start as moist westerly flow brought moderate to locally heavy rain to parts of Southern California. But the weather quickly turned dry and warm, as high pressure became reestablished along the west coast. Offshore flow dominated until the middle of the month, when some light precipitation fell across the area. A broad trough of low pressure over the western U.S. kept a dry northwest flow over California for the balance of the month, with little additional precipitation. Temperatures were generally within one to two degrees of monthly normals. For the month, a few mountain areas received some 60% to 80% of normal precipitation, but in general less than a third of normal was reported. For the season, a few deserts remained near 100% or more of normal, otherwise most areas were running at 50% or less.

San Diego - Lindbergh Field Data

	Max	Min	Avg	Rain
JAN	65.2	48.8	57.0	0.36
Normal	65.8	49.7	57.8	2.28
Anomaly	-0.6	-0.9	-0.8	-1.92
% of normal				16%
Max	83	56		0.44
Min	60	42		

January 2-3

A strong Pacific front swept through southern California accompanied by heavy rain showers and strong winds. Little snow was reported due to snow levels mostly above 7000 feet, but numerous rock and mudslides were reported on roads in steep terrain, and local urban flooding was reported as well. Some rainfall totals greater than four inches were logged on favored southwest facing coastal slopes in the mountains. Rainfall generally ranged from one half, to locally one inch on the coast and valleys, to one to two inches in the foothills, and two to four inches in the mountains. Little rain reached the lower deserts due to the strong west flow, however spots in the higher deserts logged one half inch or more.

February

High pressure aloft and dry, offshore flow at the surface kept the weather dry across Southern California through the first half of the month. Conditions became very dry, resulting in a heightened danger of wildfires. During the third week, low pressure strengthened over the Pacific Northwest and expanded south along the coast, bringing much cooler air and some rain showers. A subtropical airmass brought heavy rain to the coastal slopes and mountains at the end of the month. Temperatures averaged very close to monthly normals in most areas. For the month, mountain areas received between 60% and 100% of normal precipitation, but generally 40% to 60% was reported west of the mountains, while the deserts had less than one third of normal. For the season, amounts varied widely, from around one third of normal at the coast, to 75% to 95% of normal in the mountains and deserts.

San Diego - Lindbergh Field Data

	Max	Min	Avg	Rain
FEB	66.0	50.7	58.4	1.11
Normal	66.3	51.5	58.9	2.04
Anomaly	-0.3	-0.8	-0.5	-0.93
% of normal				54%
Max	80	56		0.06
Min	58	45		

February 27-28

A large trough of low pressure over the east Pacific pulled subtropical air over southwest California on strong southwest winds aloft. Upslope flow produced very heavy rain on the southwest facing slopes during the night of the 27th. Over half a foot of rain fell on some favored slopes, while amounts of three to five inches were common in the mountains. For the coasts and valleys, rainfall was more modest, with generally one half, to one and one half inch amounts reported. Some local flooding was reported during the heaviest rainfall, and Flash Flood Warnings were issued for parts of San Bernardino and San Diego Counties. The snow level was above 8000 feet. Since the main forcing mechanism for this event was upslope, sites reporting in the deserts had less than one half inch. The rivers all had increased flow, however all remained well below flood stage.

March

It was a cool and stormy month as a long-wave, upper trough remained anchored along the west coast, allowing many storms to affect extreme southwest California. Since most of the storms came from the north, rainfall was not excessive, though most areas, with the exception of the deserts, were well watered. Very heavy snow fell in the mountains. Due to the numerous cold air intrusions and storms originating from the north, temperatures were well below normal. Monthly average temperatures inland were from 4 to 6 degrees below normal, while coastal areas were around 3 degrees below normal.

San Diego – Lindbergh Field Data

	Max	Min	Avg	Rain
MAR	62.6	51.8	57.2	1.36
Normal	66.3	53.6	60.0	2.26
Anomaly	-3.7	-1.8	-2.8	-0.90
% of normal				60%
Max	75	56		0.17
Min	57	47		

On the 3rd a weakening cold front and upslope flow brought generally, less than one inch of precipitation to the area. On the 6th through the 8th, a low pressure trough brought two rounds of light rain with amounts close to one inch in the north, tapering to

less than one quarter inch over southern and coastal areas. On the 10th through the 13th a stronger and colder storm brought moderate to locally heavy rain west of the mountains, and very heavy snow in the mountains, and some foothills. From the 17th to the 19th more showery weather affected the area with up to 10 inches of snow in the higher mountains. Then on the 20th and 21st another weakening cold front brought light to moderate showers of rain and snow to the area. More light rain fell before dawn on the 26th with a weak upper trough. The final blow came on the 27th through the 29th as a strong low pressure system moved by to the north. Generally one-half, to one inch of rain fell west of the mountains, with one to three inches reported on the coastal slopes and ridges. Flooding was reported by law enforcement five miles west of Big Bear. Around one-half inch of rain fell in the high desert, with very little rain in the lower deserts. Reported snowfall was minimal. Except for Lindbergh Field, most areas were close to, or received well in excess of 100% of normal precipitation this month. For the season, again, except for Lindbergh Field, most areas now have between 60% and 90% of normal.

March 10-12

A very large, cold upper low developed over the Pacific Northwest on the 9th. The jet stream associated with this system exceeded 160 knots and gradually sagged south into northern Mexico through the 12th. Numerous impulses embedded in this jet stream set off rounds of heavy convection over Southern California. Snow levels lowered to around 2000 feet, with very heavy snowfall at higher elevations. Generally one to three feet was reported, with some of the heaviest amounts in the San Diego County Mountains. One foot of snow was reported as low as 3700 feet at Pine Valley, in San Diego County. Visible satellite data showed heavy snow accumulated as far as 200 miles south of the International Border. Due to the fast movement of the convection on the coastal plain, no widespread, heavy amounts of rain were reported. However numerous reports of small hail and strong winds were received, including damage near Encinitas, and a small tornado near Ramona. Several Flash Flood and Severe Thunderstorm Warnings issued. Flash Flooding was reported near La Mesa in San Diego County early on the 11th. For coastal and valley areas rainfall was generally less than one inch, with some two to three inch amounts reported in the mountain foothills.

Skywarn News

(Editors note: *A change of leadership was recently implemented and Steve Smith has returned as our Skywarn Region Coordinator as of April 2006.***)**

I have returned to the Region Coordinator position for an interim period. I have asked Jim Courter, KF6RWF, to be the Asst. Region Coordinator and Camille Popik to return to the Public Information Officer position. Fortunately, they both said yes! I have appointed Kent Tiburski, K6FQ, as the Communications Coordinator (formerly the 'Station Manager' position).

There will be many changes coming to the structure of Skywarn that should make its operations more efficient. There will be more autonomy (along with more responsibilities) for the Area Coordinators and more opportunities for Skywarn members to participate in the operations and management of our program.

We are looking for someone to step into the San Diego County Area Coordinator position as soon as possible. If you or someone you know are interested, please contact either Jim, KF6RWF or myself, Steve, WB6TWL via the email links listed on the 'Contacts" page of the SW CA Skywarn website (listed below).

There are plans to have more training programs for the spotters on various subjects. We will be having more drills to help sharpen our skills and there will be improvements to the notification systems for all four Areas within the program. We are also close to having a preliminary version of an Operations Manual available for download on the website. Details will follow soon.

On the fun side, we will be having more social activities related to our program. We will continue to participate in events such as Field Day, Skywarn Recognition Day and any other activities that we can arrange. This may include picnics, parties and get-togethers. So be sure to stay tuned for further details.

For more information, please visit the SW CA Skywarn website at **swskywarn.org**

Thank you for your patience and continued participation.

Steve Smith, WB6TWL, Region Coordinator, SW CA SKYWARN

Spotter News

As of April 12, we have a total of 1,126 spotters. Of those, 462 are Skywarn spotters.

During the recent storms in March and April, there were many quality reports received, which were very useful. For example, from Lake Arrowhead came this report: "Heavy Snow, Snow level falling below 5500, MOderate snow. Accumulation is currently at 6 - 8 inches. At 1:05 Pm PDT. Currrent temperature at 5500, is About 31.3 F. Rain Changed to snow After Midnight. Rapid Accumulation. Chains Required on all mountain roads in the san bernardino county mountains. Highway 330 is closed due to construction and storm damage. Frequent thunder and lightning." This report gave specific times, elevations, amounts and impacts.

Here is another report on a thunderstorm, short and sweet: "Strong winds about 25mph gusts and pea size hail for about 1 min." When thunderstorms happen, we start thinking about the severity of them. To be severe a thunderstorm must have hail at least ¾" in diameter (dime size or greater) and/or winds of 58 mph or greater. This report helped us gauge what the radar was telling us with the actual conditions on the ground in the storm cell.

While many spotter reports were excellent, some were less than useful. Here are some tips for improved spotter reporting:

- Do not assume we already know everything. Yes, we generally know where it is raining and where the intense rain is, but some phenomena like waterspouts, localized flooding or snowfall amounts have gone unreported based on this assumption. You will not bother us with a redundant report. In fact, a second witness will greatly help to confirm any reported weather phenomenon or impact.
- Reports of rainfall amounts are most useful when there is very intense rain for any length of time. The key is to report the time it began and the amount that actually fell during a specified length of time. Many amateur weather stations compute a rainfall rate in units per hour that can be misleading. For example, a two minute downpour may produce 0.10 inch and then stop, yet the rain gauge algorithm reports a rainfall rate of three inches per hour, and that might be reported as such. Please report only the actual rain that has fallen.
- Reports of light rain can be useful when there is a large uncertainty in the forecast regarding the chance of rain (such as a "slight chance" or no chance) and the radar may be showing some very light echoes. A report of actual rain being measured on the ground (at least 0.01") would help us adjust the forecast if necessary and gauge the radar's performance. Reports of light rainfall amounts are not useful when measurable rain becomes widespread.
- Spotters are the *only* reliable source of snowfall reports we have, because we have no real-time snow measuring equipment in the mountains. Any snow report is welcome at any time regarding snowfall rate, amount, depth on the ground, snow level in elevation, etc. When reporting snowfall, please be careful with the use of the apostrophe and quotation marks (such as ' and ") as they were seemingly reversed on several recent reports.

If you have updates to your spotter information, like a change of address (email or home), phone numbers, new equipment, or ham radio operation status, etc., please email me with them: miguel.miller@noaa.gov.

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